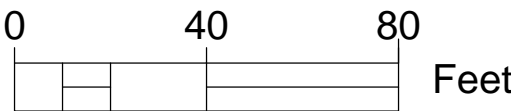


GRAPHIC SCALE



SCALE 1' = 40'

LEGEND (PROPOSED)	
DESCRIPTION	
---000---	CONTOUR LINE
---000---	CONTOUR LINE INDEX
---	UNDERGROUND ELECTRIC LINE
---W/UC---	WATER & UNDERGROUND COMMUNICATIONS LINE
---	WATER LINE
---	UNDERGROUND COMMUNICATIONS LINE
---	LIMIT OF CONTRACT

LEGEND (Existing)	
DESCRIPTION	
---	PROPERTY LINE
---	LEGAL RIGHT OF WAY
---	EDGE OF ROAD
---	EDGE OF WATER
---	INDEX CONTOUR LINE (5')
---	CONTOUR LINE (1')
---	FLOODPLAIN BOUNDARY
---	SIGN
---	UTILITY POLE
---	CLEANOUT
---	MONITORING WELL
---	TEST PIT
---	CONC. MONUMENT FOUND
---	IRON PIN FOUND

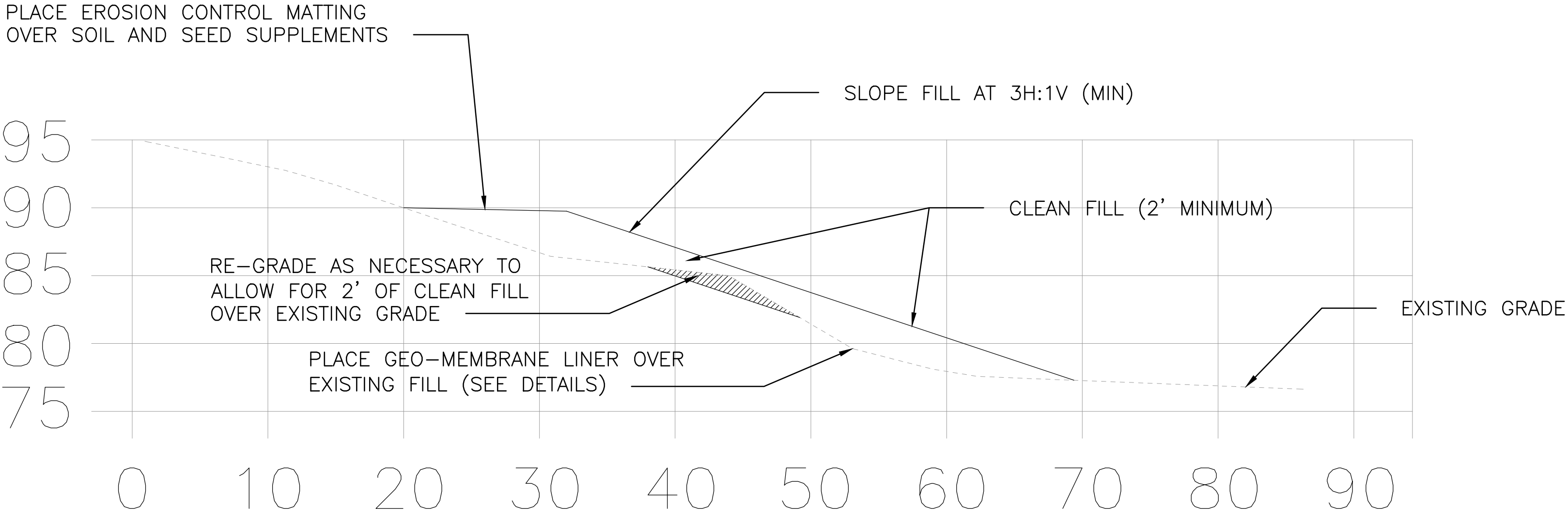
LEGEND (Existing)	
DESCRIPTION	
---	IRON PIPE FOUND
---	PK OR RR SPIKE FOUND
---	REFERENCE POINT FOUND
---	FENCE
---	WATER LINE
---	UTILITY LINE
---	STORM SEWER LINE
---	UNDERGROUND ELECTRIC LINE
---	OVERHEAD ELECTRIC LINE
---	OVERHEAD TELEPHONE LINE
---	OVERHEAD ELECTRIC & TELEPHONE LINE
---	TREE LINE
---	STRUCTURE

GENERAL NOTES:

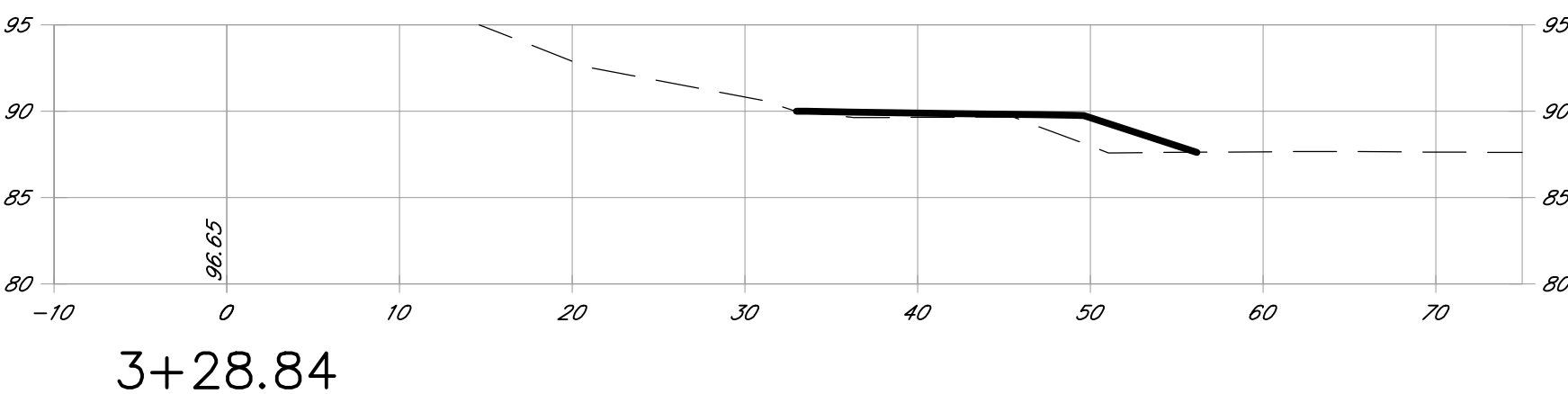
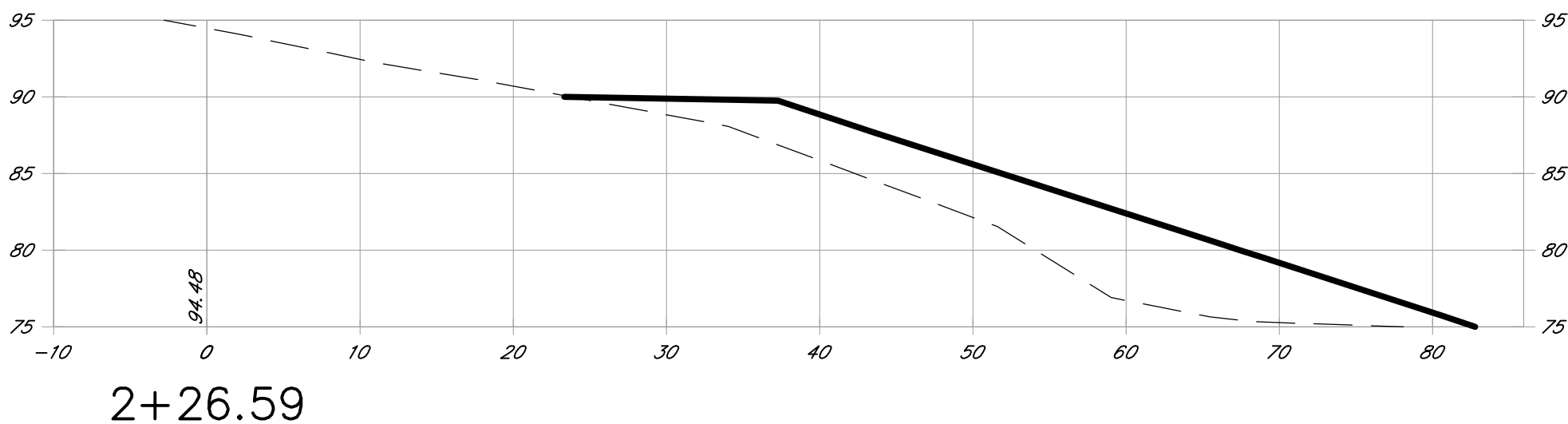
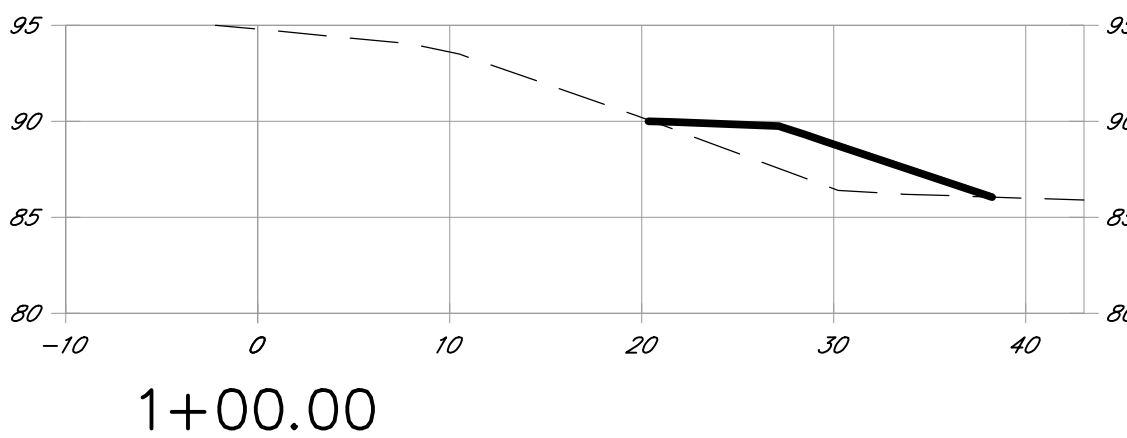
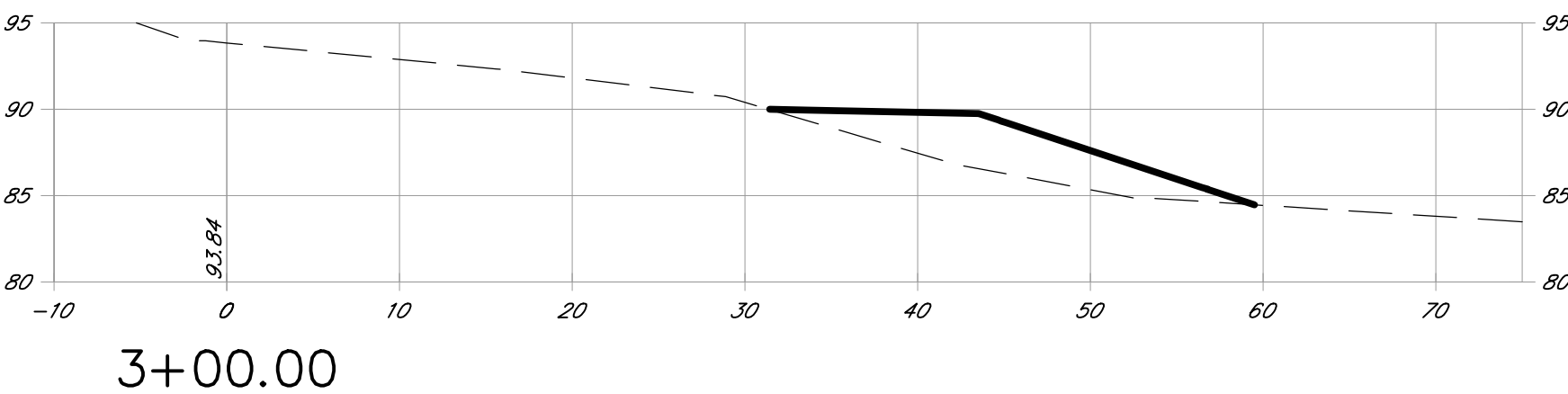
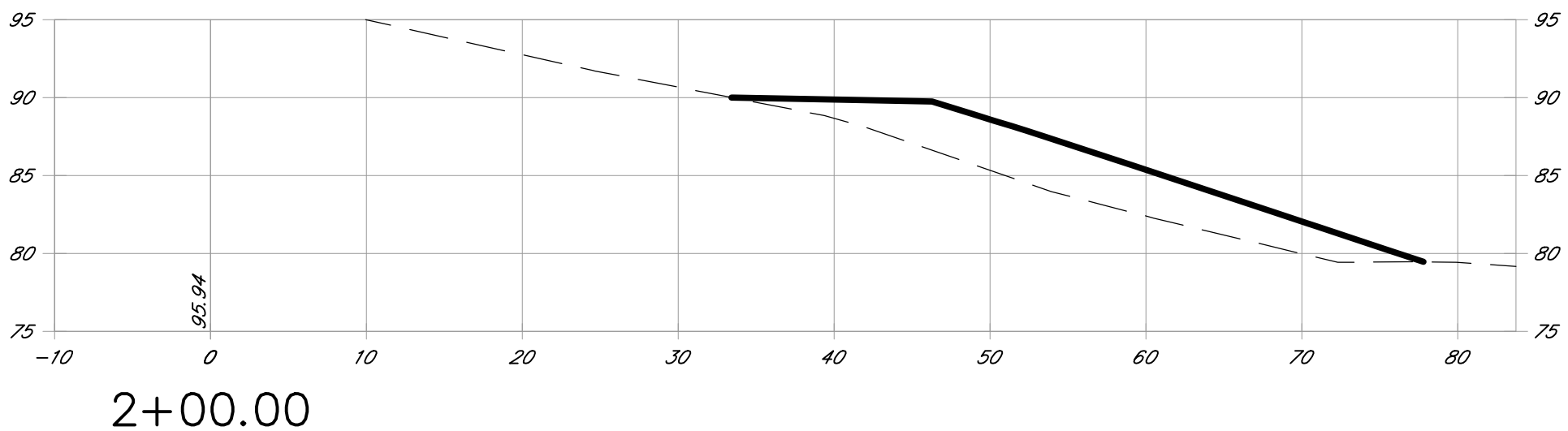
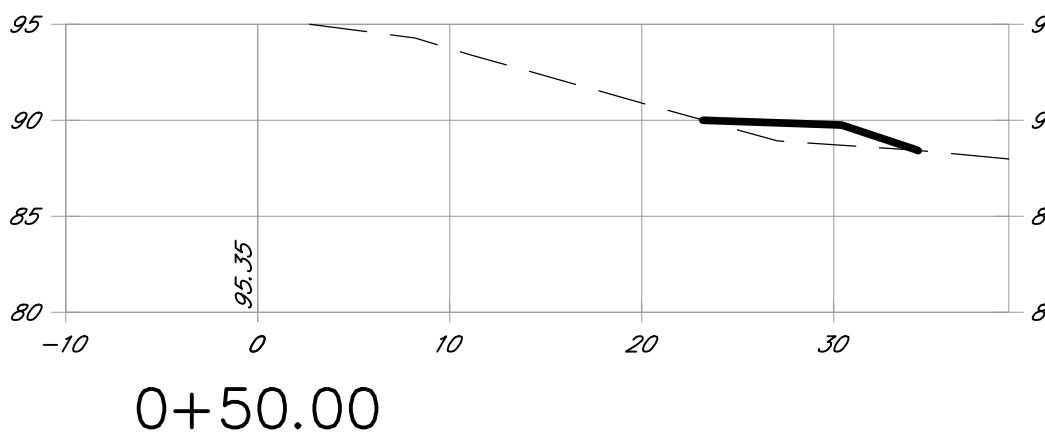
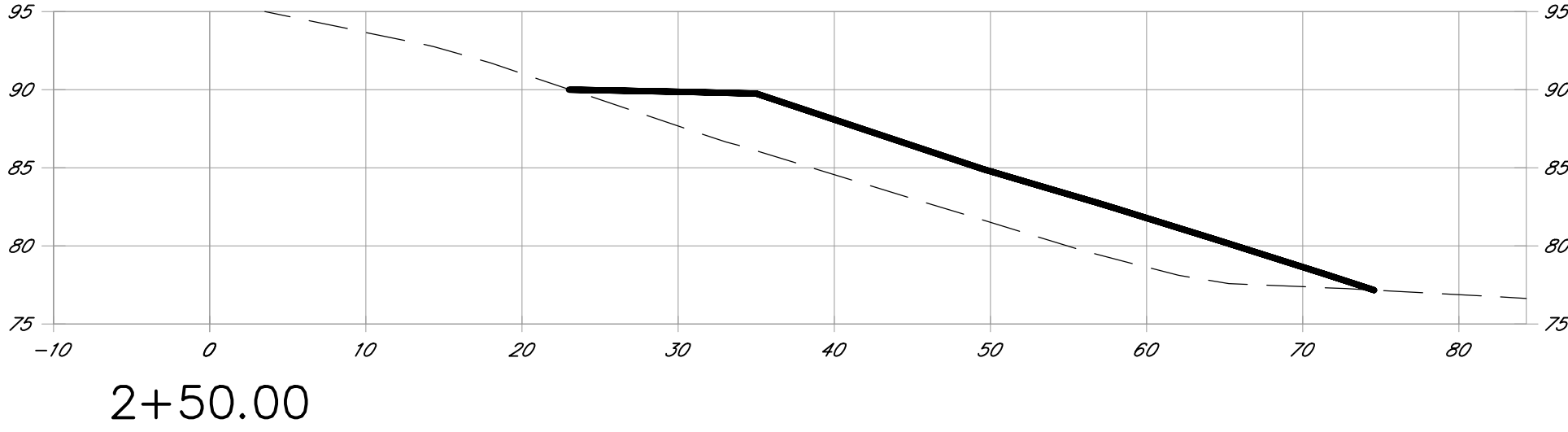
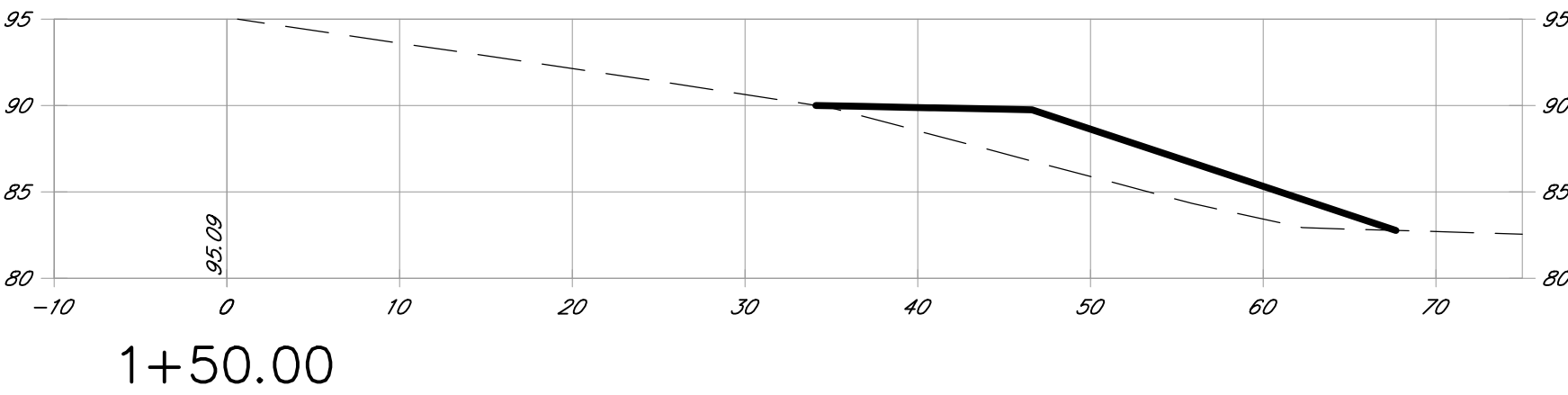
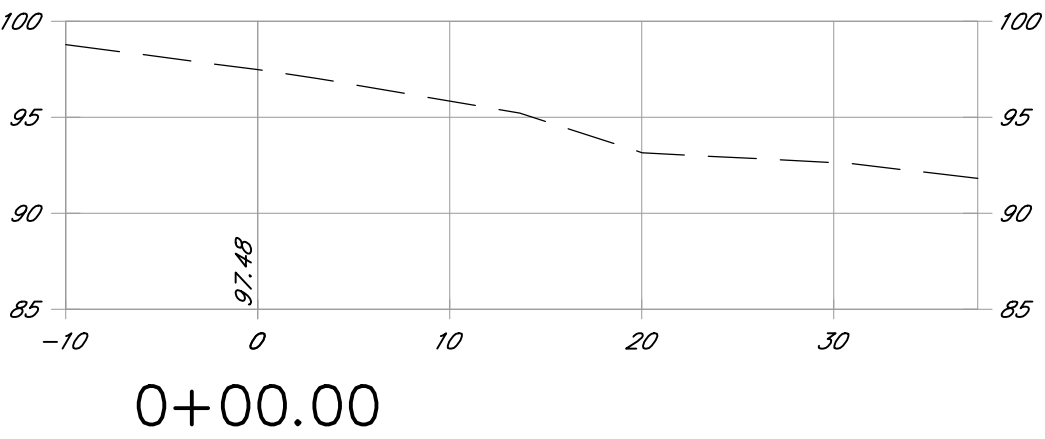
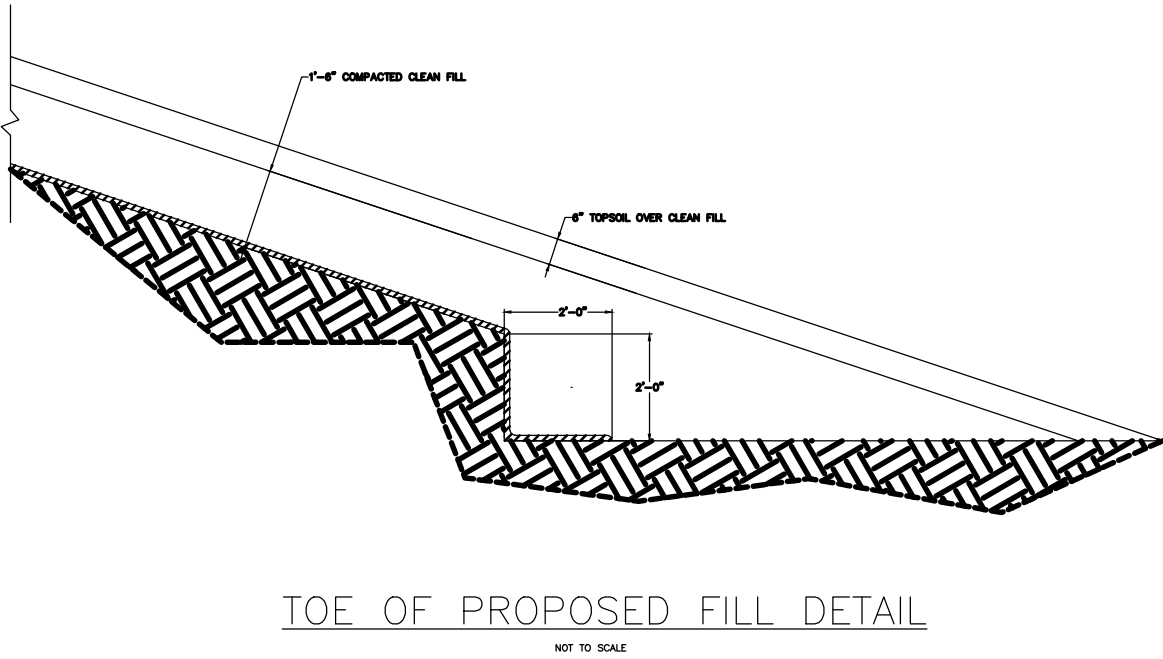
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSION AND EXISTING FEATURES LOCATED ON THE CONTRACT DRAWINGS.
2. THE PROJECT SITE HAS BEEN RECOGNIZED BY THE ENVIRONMENTAL PROTECTION AGENCY AS A HAZARDOUS DUMP SITE WITH LEAD CONTAMINATED SOIL. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL PERSONS, PROPERTY AND ENVIRONMENT.
3. THE FISHING AND BOATING PARKING LOT AND BOAT LAUNCH RAMP SHALL REMAIN OPEN TO THE PUBLIC AT ALL TIMES UNLESS OTHERWISE DIRECTED BY THE COMMISSION.

NO.	DATE	REVISION	APPR.
SUBMITTED			
PROJECT DESIGNER			
APPROVED			
DIVISION CHIEF			
APPROVED			
DIRECTOR - BUREAU OF ENGINEERING AND CONSTRUCTION			
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153			
PROJECT NO.: D.G.S. A199-86			
APPLICABLE CONTRACT NUMBERS:			
GENERAL: N/A		MECH.: N/A	
PLUMBING: N/A		ELECT.: N/A	
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT P.F.B.C. PROPERTY NO: FC-182L			
WINDSOR TOWNSHIP, BERKS COUNTY			
SITE PLAN			
DRAWN BY:	DATE: 2/11/2015	DRAWING NO.: C-2	
CHECKED BY:	SCALE: AS NOTED	SHEET 2 OF 10	

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.

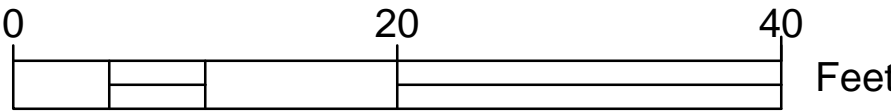


TYPICAL EARTH FILL X-SECTION



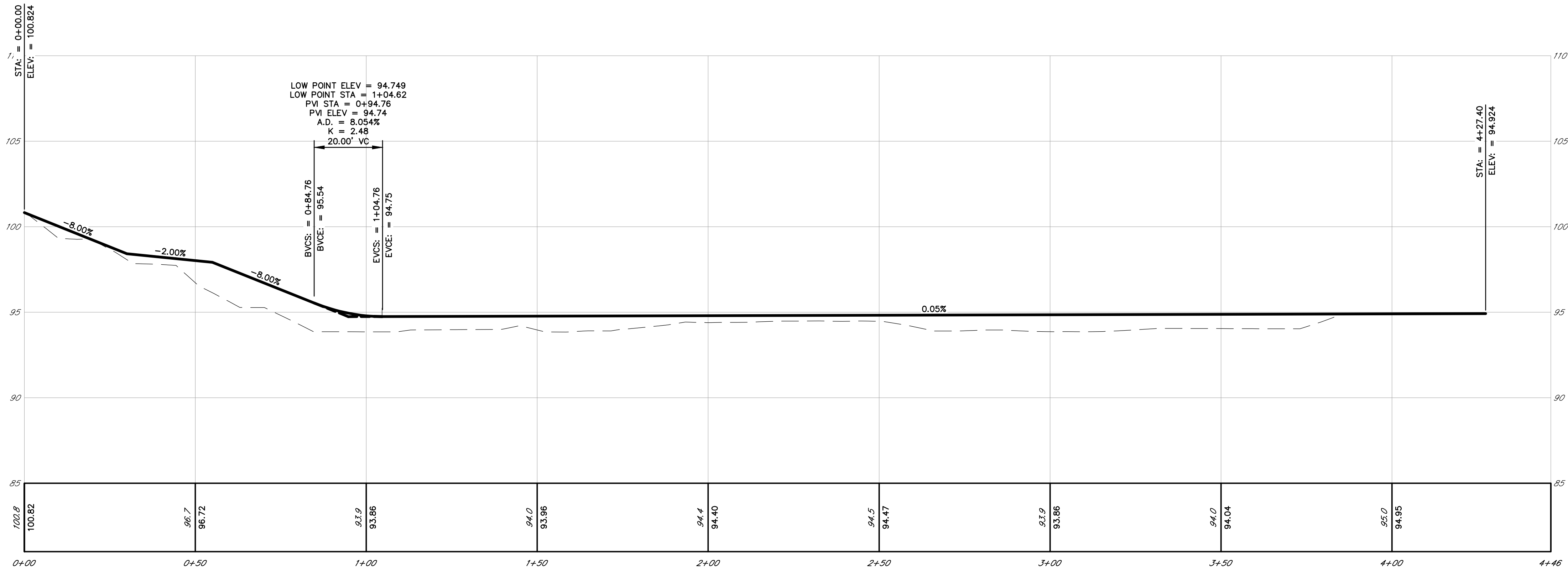
PROPOSED FILL SECTIONS

SCALE: 1"=10'

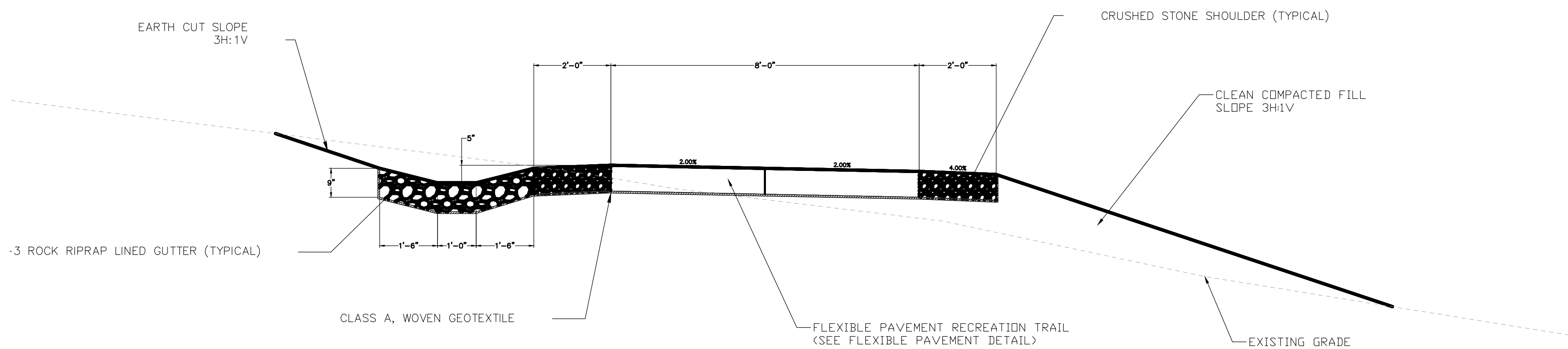


NO.	DATE	REVISION	APPR.
SUBMITTED			
PROJECT DESIGNER _____			
APPROVED			
DIVISION CHIEF _____			
APPROVED			
DIRECTOR — BUREAU OF ENGINEERING AND CONSTRUCTION _____			
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153			
PROJECT NO.: D.G.S. A199-86			
APPLICABLE CONTRACT NUMBERS:			
GENERAL: N/A		MECH.: N/A	
PLUMBING: N/A		ELECT.: N/A	
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT P.F.B.C. PROPERTY NO: FC-182L			
WINDSOR TOWNSHIP, BERKS COUNTY			
EARTH FILL SECTIONS AND DETAILS			
DRAWN BY:	DATE: 2/11/2015	DRAWING NO.: C-2.1	
CHECKED BY:	SCALE: AS NOTED	SHEET 3 OF 10	

ALL DIMENSIONS AND EXISTING
CONDITIONS SHALL BE CHECKED
AND VERIFIED BY CONTRACTOR
AT THE SITE.



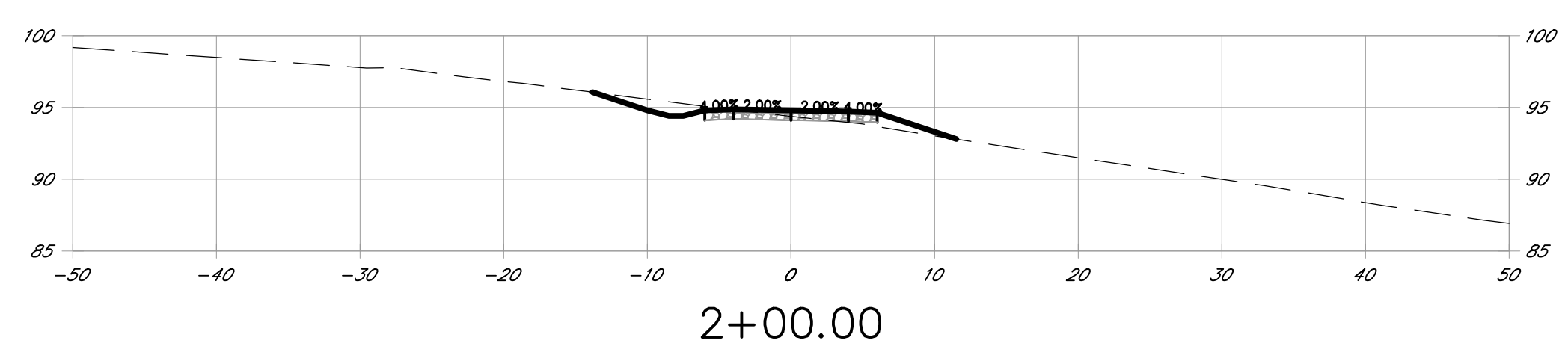
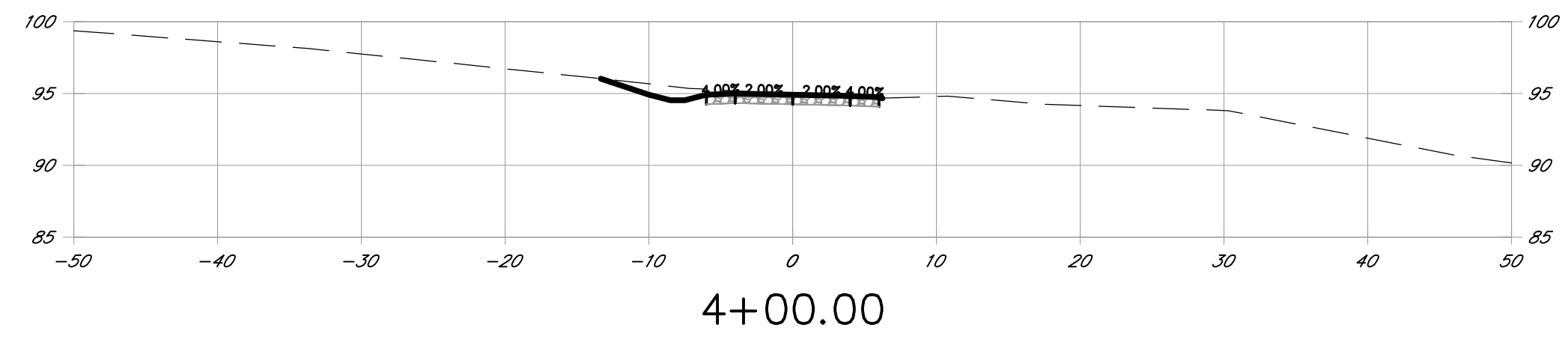
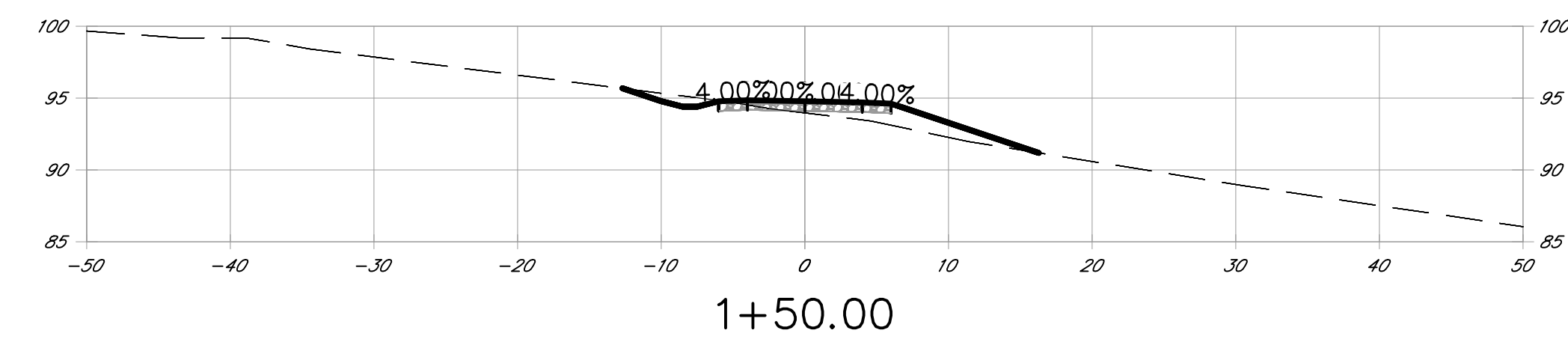
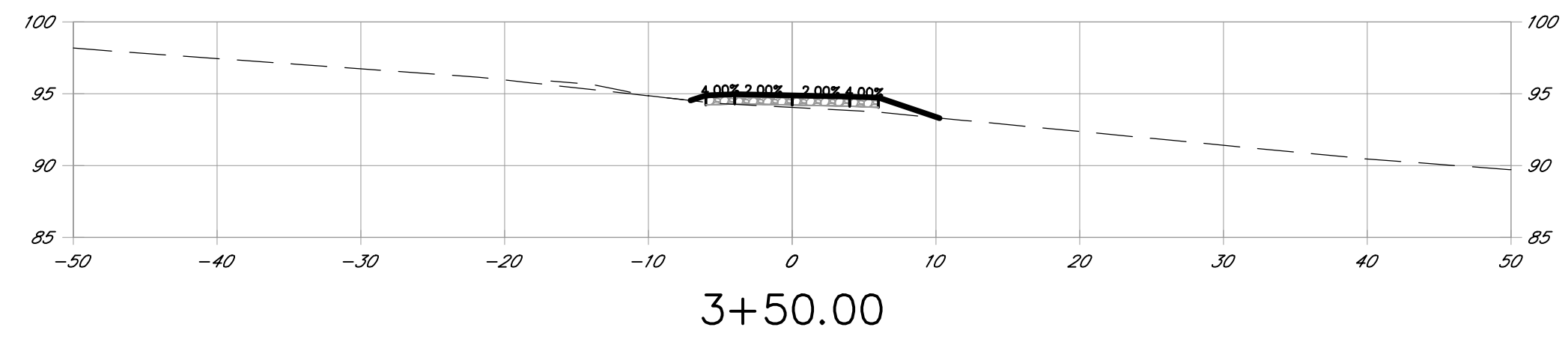
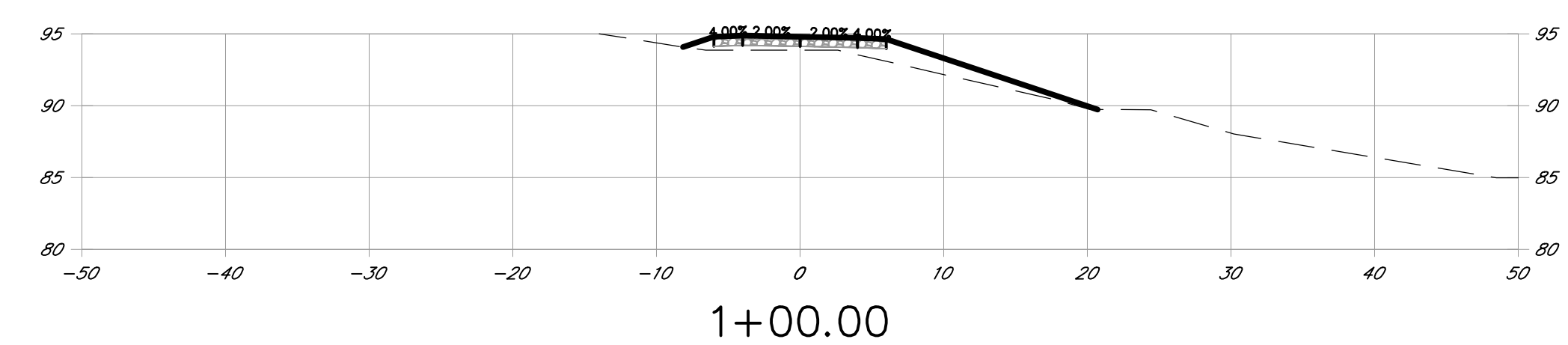
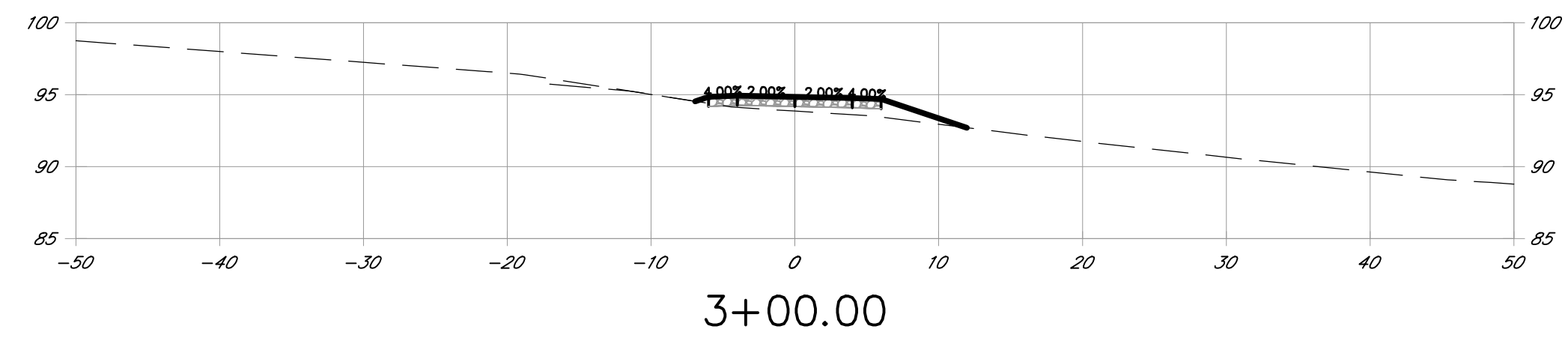
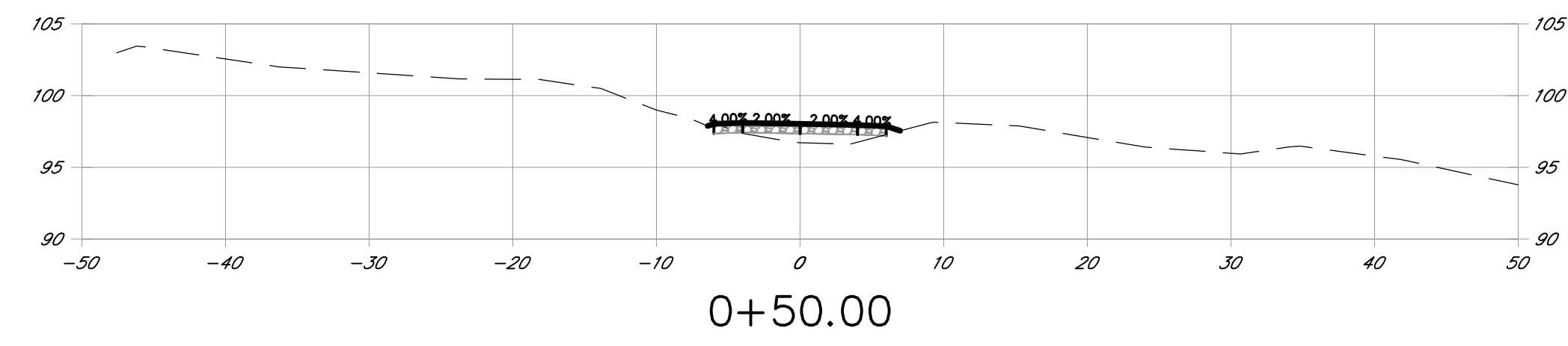
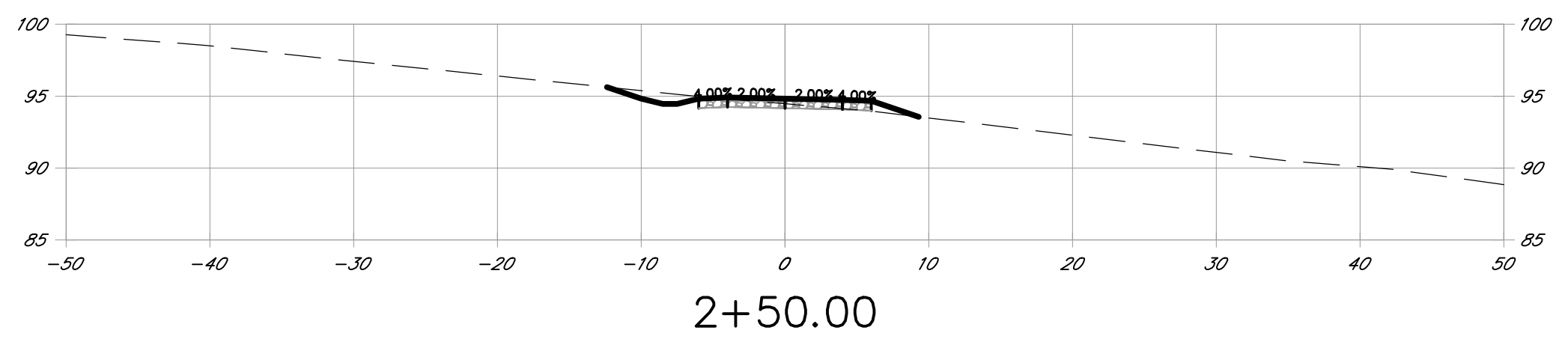
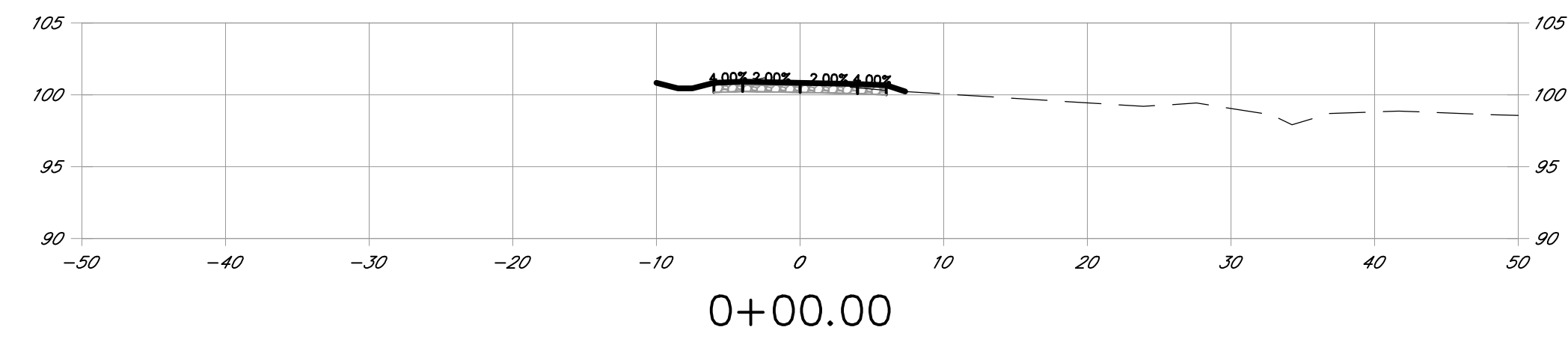
TRAIL
HORZ. SCALE: 1"=20'
VERT. SCALE: 1"= 4'



TYPICAL TRAIL SECTION

NOT TO SCALE

NO.	DATE	REVISION	APPR.
SUBMITTED			
PROJECT DESIGNER			
APPROVED			
DIVISION CHIEF			
APPROVED			
DIRECTOR - BUREAU OF ENGINEERING AND CONSTRUCTION			
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153			
PROJECT NO.: D.G.S. A199-86			
APPLICABLE CONTRACT NUMBERS:			
GENERAL: N/A		MECH.: N/A	
PLUMBING: N/A		ELECT.: N/A	
KAERCHER CREEK LAKE BATTER ABATEMENT PROJECT PFBC PROPERTY NO: FC-182L			
WINDSOR TOWNSHIP, BERKS COUNTY			
RECREATION TRAIL PROFILE AND TYPICAL SECTION			
DRAWN BY:	DATE:	DRAWING NO.:	C-3
CHECKED BY:	SCALE:	AS NOTED	
SHEET 5 OF 10			

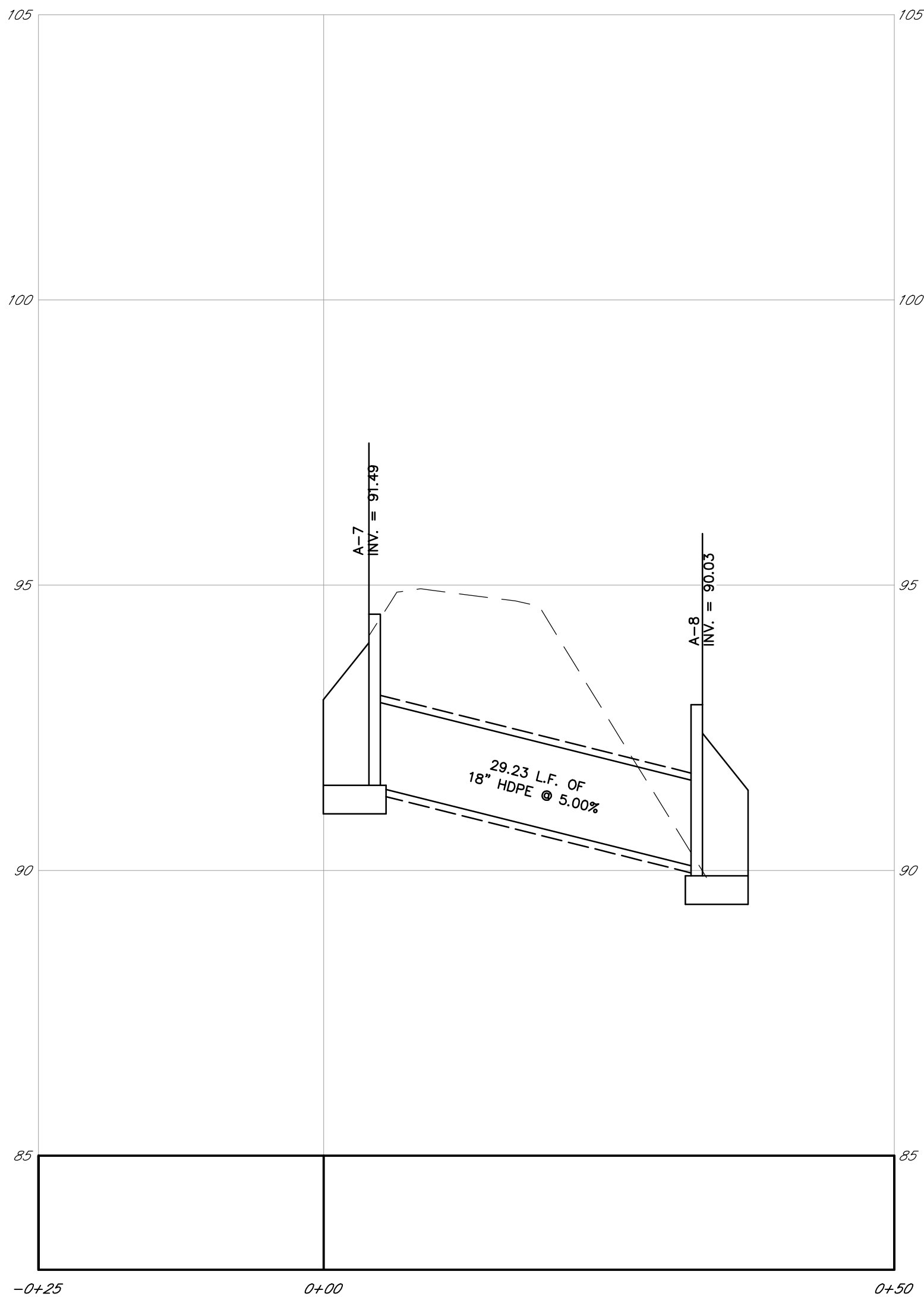


PROPOSED TRAIL SECTIONS

SCALE: 1"=10'

ALL DIMENSIONS AND EXISTING
CONDITIONS SHALL BE CHECKED
AND VERIFIED BY CONTRACTOR
AT THE SITE.

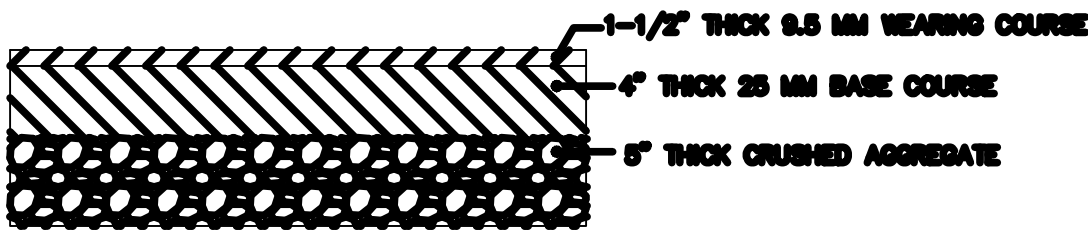
NO.	DATE	REVISION		APPR.
SUBMITTED				
PROJECT DESIGNER _____				
APPROVED				
DIVISION CHIEF _____				
APPROVED				
DIRECTOR - BUREAU OF ENGINEERING AND CONSTRUCTION _____				
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153				
PROJECT NO.: D.G.S. A199-86				
APPLICABLE CONTRACT NUMBERS:				
GENERAL: N/A		MECH.: N/A		
PLUMBING: N/A		ELECT.: N/A		
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT PFBC PROPERTY NO: FC-182L				
WINDSOR TOWNSHIP, BERKS COUNTY				
RECREATION TRAIL SECTIONS				
DRAWN BY:	DATE:	DRAWING NO.:		
CHECKED BY:	2/20/2015	C-3.1		
	SCALE:	SHEET 6 OF 10		
	AS NOTED			



CROSS PIPE
HORZ. SCALE: 1"=20'
VERT. SCALE: 1"= 4'

Pipe Table			
Pipe Name	Size	Length	Slope
A-5 (1)	18 HDPEP	29.23	5.00%

Structure Table		
NAME	TYPE	TOP
A-7	HW (for 18" pipe) A-5 (1) INV OUT = 91.49	96.18
A-8	HW (for 18" pipe) A-5 (1) INV IN = 90.03	91.66



TYPICAL PAVING SECTION
N.T.S.

ALL DIMENSIONS AND EXISTING
CONDITIONS SHALL BE CHECKED
AND VERIFIED BY CONTRACTOR
AT THE SITE.

NO.	DATE	REVISION	APPR.
SUBMITTED			
PROJECT DESIGNER			
APPROVED			
DIVISION CHIEF			
APPROVED			
DIRECTOR - BUREAU OF ENGINEERING AND CONSTRUCTION			
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153			
PROJECT NO.: D.G.S. 199-86			
APPLICABLE CONTRACT NUMBERS:			
GENERAL: N/A		MECH.: N/A	
PLUMBING: N/A		ELECT.: N/A	
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT PFBC PROPERTY NO.: FC-182L			
WINDSOR TOWNSHIP, BERKS COUNTY			
STORM WATER PIPE PROFILE MISCELANEOUS DETAILS			
DRAWN BY:	DATE:	DRAWING NO.:	
CHECKED BY:	SCALE:	C-4	
	AS NOTED	SHEET 7 OF 10	



LEGEND (Existing)

DESCRIPTION	DESCRIPTION
--- PROPERTY LINE	○ IRON PIPE FOUND
--- LEGAL RIGHT OF WAY	● PK OR RR SPIKE FOUND
--- EDGE OF ROAD	▲ REFERENCE POINT FOUND
--- EDGE OF WATER	
--- INDEX CONTOUR LINE (5')	
--- CONTOUR LINE (1')	
--- FLOODPLAIN BOUNDARY	□ FENCE
--- SIGN	--- WATER LINE
○ UTILITY POLE	--- UTILITY LINE
○ CLEANOUT	=== STORM SEWER LINE
○ MONITORING WELL	--- UNDERGROUND ELECTRIC LINE
⊗ TEST PIT	--- OVERHEAD ELECTRIC LINE
⊗ CONC. MONUMENT FOUND	--- OVERHEAD TELEPHONE LINE
● IRON PIN FOUND	--- OVERHEAD ELECTRIC & TELEPHONE LINE
	--- TREE LINE
	□ STRUCTURE

LEGEND (PROPOSED)

DESCRIPTION
--- CONTOUR LINE
--- CONTOUR LINE INDEX
--- UNDERGROUND ELECTRIC LINE
--- W/UC WATER & UNDERGROUND COMMUNICATIONS LINE
--- WATER LINE
--- UNDERGROUND COMMUNICATIONS LINE
--- LIMIT OF CONTRACT

LEGEND (SESC)

--- LOD	--- NPDES/LOD BOUNDARY
--- 12CFS	--- PROPOSED 12" COMPOST FILTER SOCK
---	--- PROPOSED STONE FILTER BERM
---	--- PROPOSED ROCK CONSTRUCTION ENTRANCE

SOILS TABLE

SYMBOL	NAME
Aw	ATKINS SILT LOAM
BwC	BUCHANAN COBBLY LOAM, 8-18% SLOPES, EXTREMELY STONY
TyS	TYLER SILT LOAM, 3-8% SLOPES

NO.	DATE	REVISION	APPR.
SUBMITTED			
PROJECT DESIGNER			
APPROVED			
DIVISION CHIEF			
APPROVED			
DIRECTOR - BUREAU OF ENGINEERING AND CONSTRUCTION			
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153			
PROJECT NO.: D.G.S. A199-86			
APPLICABLE CONTRACT NUMBERS:			
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PLUMBING: N/A		ELECT.: N/A	
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT PFBC PROPERTY NO. FC-182L			
WINDSOR TOWNSHIP, BERKS COUNTY			
EROSION AND SEDIMENT CONTROL PLAN			
DRAWN BY:	DATE:	DRAWING NO.:	
CHECKED BY:	SCALE:	ES-1	
	AS NOTED	SHEET 8 OF 10	

ALL DIMENSIONS AND EXISTING
CONDITIONS SHALL BE CHECKED
AND VERIFIED BY CONTRACTOR
AT THE SITE.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT
SOIL EROSION & SEDIMENT CONTROL PLAN

CONSTRUCTION SEQUENCE

- All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
 - All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed and immediately stabilized before any following stage is initiated. Clearing, grubbing and topsoil stripping shall be limited only to those areas described in each stage. Any deviation from the following sequence must be approved in writing from the local conservation district.
- At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on-site pre-construction meeting.
 - At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
 - The Owner shall field mark the limits of disturbance for all work and all waters of the Commonwealth boundaries (ex. stream buffers, wetland boundaries, spring seeps, and floodway) prior to the start of construction.
 - The Contractor shall install 12" compost filter sock or equivalent size silt fence, and stabilized construction entrances as shown on the plan.
 - The Contractor to clear and grub areas only required to be cleared by the proposed construction.
 - Install temporary piping, demolish existing raceways, and install new electrical facilities, per sequencing plan.
 - Construct proposed raceways and buildings and remove temporary facilities, per sequencing plan.
 - Grade site and construct gravel and paved access drives.
 - Restore remaining area with 6" of topsoil, seed and mulch or soil amendment as identified.
 - Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district for an inspection prior to removal/conversion of the E&S BMPs.
 - Upon completion of all earth disturbance activities, removal of all temporary BMPs, installation of all permanent PCSM BMPs, and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the conservation district to schedule a final inspection.

Note:
The order of the above schedule is subject to change due to specific site conditions and construction methods. Any changes should be made under the direct supervision of a representative of the Bedford County Conservation District. It is the responsibility of the contractor to contact the Bedford County Conservation District 72 hours prior to construction and 72 hours prior to leaving the site.

Bedford County Conservation District
702 West Pitt Street, Suite 3
Bedford, PA 15522
(814) 623-7900

SOIL EROSION & SEDIMENTATION CONTROL NOTES

- A copy of the approved erosion and sediment control plan must be available at the project site at all times. The local conservation district shall be notified of any changes to the approved plan prior to implementation of those changes. The District may require a written submittal of those changes for review and approval at its discretion.
- Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.
- All pumping of sediment laden water shall be through a sediment control BMP, such as a pumped water filter bag or equivalent sediment removal facility, over undisturbed vegetated areas.
- Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Stream Law. The Clean Streams Law provides for up to \$10,000 per day in civil penalties, up to \$10,000 in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation.
- All building materials and wastes must be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25 P.A. Code 260.1 et seq., 271.1, and 287.1 et seq. No building materials or wastes or unused building material shall be burned, buried, dumped, or discharged at the site.
- The contractor will be responsible for the removal of any excess material and make sure the sites receiving the excess has an approved and fully implemented erosion and sediment control plan that meets the conditions of Chapter 102 and/or other State or Federal regulations.
- Clean Fill is defined as: Uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized. (The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re-use.)
- Any placement of clean fill that has been affected by a spill or release of a regulated substance must use form FP-001 to certify the origin of the fill material and the results of the analytical testing to qualify the material as clean fill. Form FP-001 must be retained by the owner of the property receiving the fill.
- Environmental due diligence must be performed to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence is defined as: investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits. Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of a regulated substance. If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's policy "Management of Clean Fill."
- At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.

SOIL LIMITATIONS AND RESOLUTIONS

- Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, and other objectionable material.
- All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
- All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
- Fill materials shall be free of frozen ice, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.
- Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
- Fill shall not be placed on saturated or frozen surfaces.
- Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.

The soils found at the project site are characterized by several limitations that will affect the proposed construction. Only two of the four soils will be in the area of disturbance. The limitations will be resolved using the following methods:

* Atkins Silt Loam (Aw) & Tyler Silt Loam (TgB) – Soil feature that adversely affects suitability for SHALLOW EXCAVATIONS is DEPTH TO SATURATED ZONE, CUTBANKS CAVE, FLOODING/PONDING.

Resolution – Pumped water filter bags shall be used throughout construction. Excavations shall be laid back enough to prevent slopes from caving.

ON-SITE MATERIAL USE

- All non-organic, non-carbonaceous soils excavated during site excavation/grading can be used for structural backfill and roadways. However, some of the site soils could be moisture-sensitive and will probably be affected by precipitation. When these conditions exist, soils will require air-drying prior to consolidation. Shrink-swell potential is not a concern with this soil type.

The on-site borrow area consists of weathered shale. This shale has a cobble consistency and therefore could not be tested for a proctor. However, the shale was sampled and analyzed for pyrite utilizing the Forms of Sulfur testing. This material sample was reported to have a pyrite sulfur of 1.70 percent. A value of 0.5 or greater is cause of concern for a potential AD (Acid Drainage) event to occur. An imported material could be necessary for use as additional backfill. This on-site shale material should not be utilized near any of the fish rearing areas or other areas that could allow it to create acid drainage. If utilized for backfill/fill material, it should be placed above any possible wet areas and/or groundwater elevations to remain high and dry. This material is also susceptible to weathering and should not be used for a "final fill" for any road surfaces. It will work for subbase material in areas that are high and dry.
- During excavation and grading, proposed backfill material not immediately placed and compacted, should be stockpiled and protected from moisture by sealing the surface with light compaction. Samples of the fill material should be obtained during excavation by an experienced Geotechnical Engineer (or his representative) to determine moisture density relationships as per ASTM D1557 9(Modified Proctor). All testing should be completed by an approved, independent testing agency.
- Upon completion of the construction of the foundation system, the excavation should be backfilled. Backfill compaction should be with a smooth-wheel vibratory roller with a minimum static weight of ten (10) tons. Fill placement at the site should include in-situ density testing to document that placement of the fill material meets or exceeds project specifications. Each lift of the controlled compacted fill should be closely observed and tested by an approved, independent testing agency.
- Fill placement should be completed in maximum eight (8) inch loose lift layers and compacted to 100% of maximum dry density (2%±) as determined by ASTM D1557 or to an "visual non-movement" for materials consisting of rock with greater than 30 percent plus 3/4 inch material, unless otherwise authorized by the project Geotechnical Engineer.
- With the exception of the topsoil, organics and shale encountered, the underlying soil/weathered rocks are suitable for use as an engineered backfill material.

CRUSHED CONCRETE MATERIAL

There are existing concrete structures that will be demolished as part of the project scope. This material could be utilized as backfill material if it is properly pulverized to a maximum three (3) inch top size and all rebar removed. The Contractor will have to follow all necessary rules/regulations and acquire any permits necessary to crush material on site.

SITE CLEARING

Prior to excavation for construction, and before fill placement, areas receiving fill should be cleared of all vegetation and unsuitable material (topsoil, organic material, soft or loose soils, existing concrete structures, etc.)

EXCAVATIONS

- Excavations for the proposed footings should be made after site grading is complete. Excavations for footings should be observed by an experienced Geotechnical Engineer (or his representative) to document that the proposed footings are located on anticipated bearing strata. Soft or loose soils encountered during the excavation of footings should be removed and backfilled at the direction of the Geotechnical Engineer.
- It is critical that the foundation excavation be monitored by the project Geotechnical Engineer (or his representative) to document that the above-mentioned excavation is completed.
- Groundwater was present during the test boring program. This water, along with water that may emanate through the ground from nearby raceways, will be encountered during construction. This water should be controllable with conventional techniques, such as diversions, temporary pump pumps, and/or foundation drains.

There is a natural spring that serves as the primary source for this facility. The raceway on the west side of the hatch house is the closest structure to this spring. Provisions will be needed to protect this water source and also to handle the water emanating from it during the construction process.

SOIL EROSION & SEDIMENTATION CONTROL LEGEND (PROPOSED)

	NPDES BOUNDARY
	LOD BOUNDARY
	12" COMPOST FILTER SOCK
	VEGETATED FILTER STRIP
	ROCK FILTER
	INLET PROTECTION
	TOPSOIL STOCKPILE
	STREAM/ WETLAND IMPACT AREA
	ROCK CONSTRUCTION ENTRANCE
	SESC MATTING (BLANKET)
	RIP-RAP

STABILIZATION SPECIFICATIONS

- Upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities will exceed 4 days, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.
- Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist slumping, sliding, or other movements.
- Topsoil required for the establishment of vegetation shall be stockpiled at the locations shown on the plan drawings in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2 horizontal:1 vertical or flatter.
- Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches – 6 to 12 inches on compacted soils – prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outcrops shall have a minimum of 2 inches of topsoil.
- Topsoil should not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seeded preparation. Compacted soils should be scarified 6 to 12 inches along contour whenever possible prior to seeding.
- Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Disturbed areas which are not at finished grade and which will be re-disturbed within 1 year must be stabilized in accordance with the temporary vegetative stabilization specifications. Disturbed areas which are at final grade or which will not be re-disturbed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
- An erosion control blanket will be installed on all disturbed slopes 3:1 or steeper, all areas of concentrated flows, and disturbed areas within 50 feet of a surface water.
- E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.
- Straw and hay mulch should be anchored immediately after application to prevent being windblown. A tractor-drawn implement may be used to "crimp" the straw or hay into the soil. This method is limited to slopes no steeper than 3:1. The machinery should be operated on the contour. (Note: Crimping of hay or straw by running over it with tracked machinery is not recommended.)
- Asphalt, either emulsified or cut-back, containing no solvents or other diluting agents toxic to plant or animal life, uniformly applied at the rate of 31 gallons per 1000 sq. yd. may be used to tack mulch.
- Synthetic Binders (chemical binders) may be used as recommended by the manufacturer to anchor mulch provided sufficient documentation is provided to show they are non-toxic to native plant and animal species.
- Lightweight plastic, fiber, or paper nets may be stapled over the mulch according to manufacturer's recommendations.
- Tracking slopes is required by running tracked machinery up and down the slope, leaving tread marks parallel to the contour. (Note: If a bulldozer is used, the blade shall be up.) Care should be exercised on soils having a high clay content to avoid over-compaction.

MAINTENANCE PROGRAM

- Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
- All sediment removed from BMPs will be returned to upland areas on site and incorporated into the site grading.
- A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.
- The permittee must ensure that visual site inspections are conducted weekly, and after each measurable precipitation event by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that the erosion and sediment control (E&S) BMPs are operational and effective in preventing pollution to the Waters of the Commonwealth. A written report of each inspection shall be kept, and include:
 - A summary of the site conditions, E&S BMPs, and compliance, and
 - The date, time, and the name of the person conducting the inspection.
- Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.

SEEDING RESTORATION TABLE

RESTORATION CONDITION	TOPSOIL	LIME*	BASIC FERTILIZER	STARTER FERTILIZER	SEED MIX & SOWING RATE (% BY WEIGHT)
Temporary Cover (PennDOT E) & Wet Soils	N/A	1 Ton/Acre	5-5-5 1000#/Acre	N/A	100% Annual Ryegrass 10# Per 1,000 Sq.Yds. March 15 Through October 15
Roadside Non-Mowed (PennDOT D)	Yes	800# Per 1,000 Sq.Yd.	10-20-20 @ 140# Per 1,000 Sq.Yd.	38-0-0 @ 50# Per 1,000 Sq.Yd. OR 31-0-0 @ 61# Per 1,000 Sq.Yd.	80% Kentucky 31, Fescue 20% Pennlawn Red Fescue 21# Per 1,000 Sq.Yds. March Through May/August Through October 15
Bank Areas (PennDOT C)	Yes	800# Per 1,000 Sq. Yd.	No	38-0-0 @ 50# Per 1,000 Sq.Yd. OR 31-0-0 @ 61# Per 1,000 Sq.Yd.	45% Crownvetch 55% Annual Ryegrass Sow 9# Per 1,000 Sq.Yds. Anytime Except September And October
Lawns (PennDOT B)	Yes	800# Per 1,000 Sq. Yd.	10-20-20 @ 140# Per 1,000 Sq.Yd.	38-0-0 @ 50# Per 1,000 Sq.Yd. OR 31-0-0 @ 61# Per 1,000 Sq.Yd.	50% Kentucky Bluegrass 30% Pennlawn Red Fescue 20% Perennial Ryegrass Sow 21# Per 1,000 Sq.Yds. March Through May/Aug. Through October 15
Open Fields; Non-Cultivated, Pasture	No	No	No	38-0-0 @ 50# Per 1,000 Sq.Yd. OR 31-0-0 @ 61# Per 1,000 Sq.Yd.	100% Timothy Sow 10# Per 1,000 Sq. Yds. March through May/Aug. through Sept.
Cultivated Fields	No	No	No	38-0-0 @ 50# Per 1,000 Sq.Yd. OR 31-0-0 @ 61# Per 1,000 Sq.Yd.	Marh 15 Through August 16 100% Spring Oats SOW 3# PER 1,000 Per Sq.Yds. August 16 Through March 15 100% Winter Wheat Sow 5# Per 1,000 Sq.Yds. OR 100% Winter Rye Sow 4# Per 1,000 Sq.Yds.
Woods; Sparse	No	No	10-20-20 @ 140# Per 1,000 Sq.Yd.	38-0-0 @ 50# Per 1,000 Sq.Yd. OR 31-0-0 @ 61# Per 1,000 Sq.Yd.	100% Red Fescue Sow 10# Per 1,000 Sq.Yds. March Through May/August Through October 15
Sodding	Yes	800# Per 1,000 Sq.Yd.	0-20-20 @ 140# Per 1,000 Sq.Yd.	N/A	N/A

Mulch immediately after temporary and permanent seeding by placing hay and straw mulch in a continuous blanket at a minimum rate of 1,200 pounds per 1,000 square yards.

- Unless lesser rate indicated by soils tests.
- A minimum 6" of topsoil shall be placed on all disturbed areas to be permanently revegetated.

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY CONTRACTOR AT THE SITE.

DRAWING INDEX

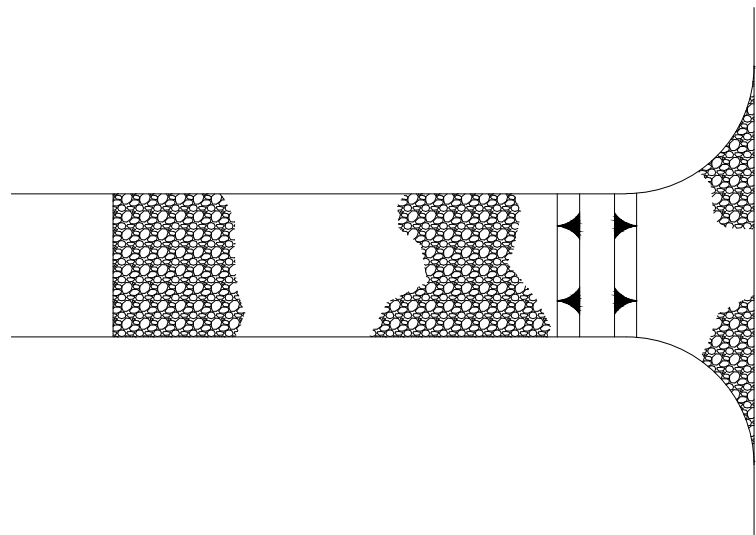
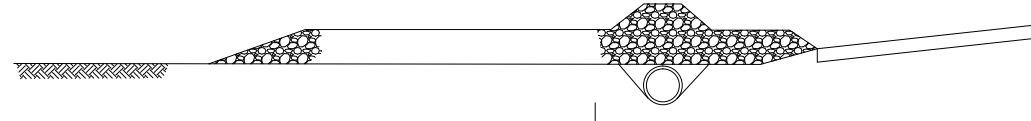
SHEET NO.	DESCRIPTION
ES-1	EROSION & SEDIMENT CONTROL PLAN
ES-2	EROSION AND SEDIMENT CONTROL NOTES
ES-3	EROSION AND SEDIMENT CONTROL DETAILS

NO.	DATE	REVISION		APPR.

SUBMITTED	
PROJECT DESIGNER	
APPROVED	
DIVISION CHIEF	
APPROVED	
DIRECTOR – BUREAU OF ENGINEERING AND CONSTRUCTION	
PENNSYLVANIA FISH AND BOAT COMMISSION BUREAU OF ENGINEERING 450 ROBINSON LANE BELLEFONTE, PA 16823 PHONE: (814) 359-5173 FAX:(814) 359-5153	

PROJECT NO.: D.G.S. 199-86	
APPLICABLE CONTRACT NUMBERS:	
GENERAL: N/A	MECH.: N/A
PLUMBING: N/A	ELECT.: N/A
KAERCHER CREEK LAKE BATTERY ABATEMENT PROJECT PFBC PROPERTY NO.: FC-182L	
WINDSOR TOWNSHIP, BERKS COUNTY	

EROSION AND SEDIMENT CONTROL NOTES		
DRAWN BY:	DATE: 2/20/2015	DRAWING NO.: ES-2 SHEET 9 OF 10
CHECKED BY:	SCALE: AS NOTED	



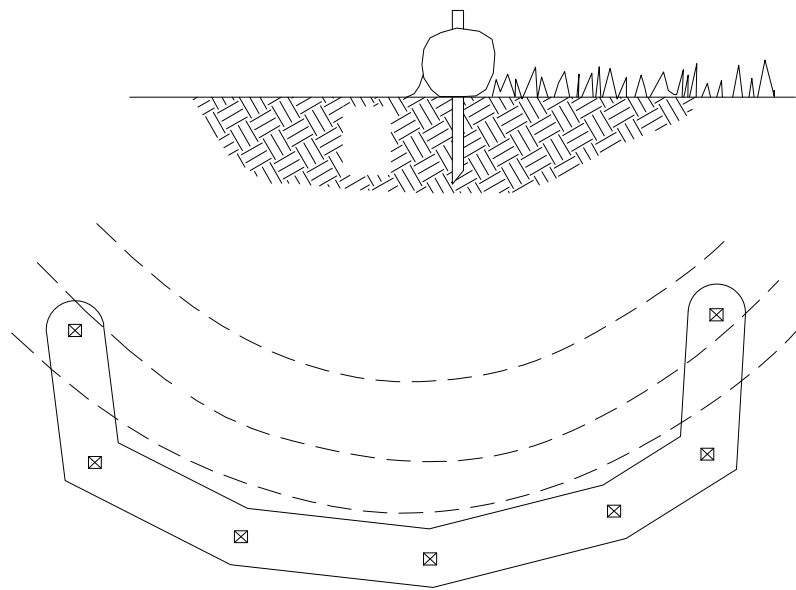
NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

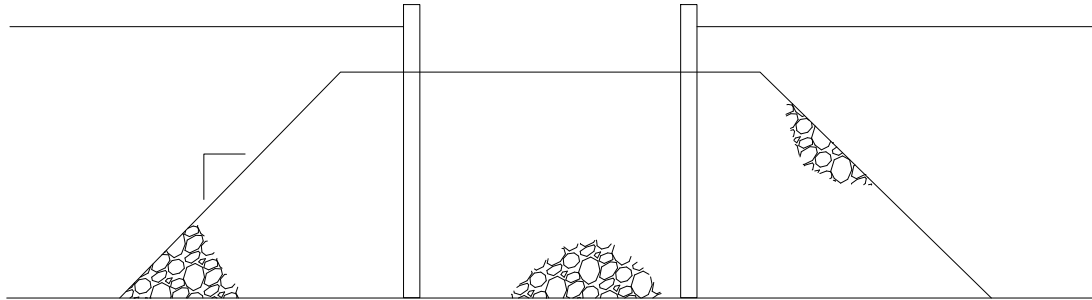
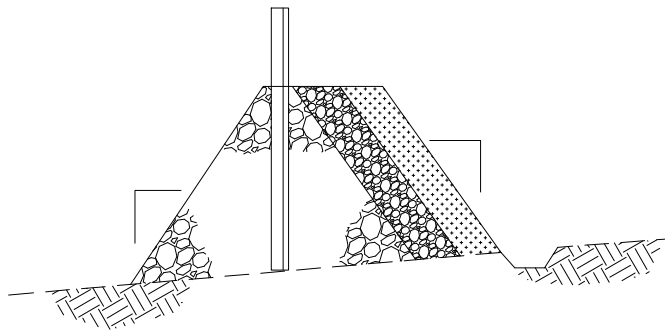
TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

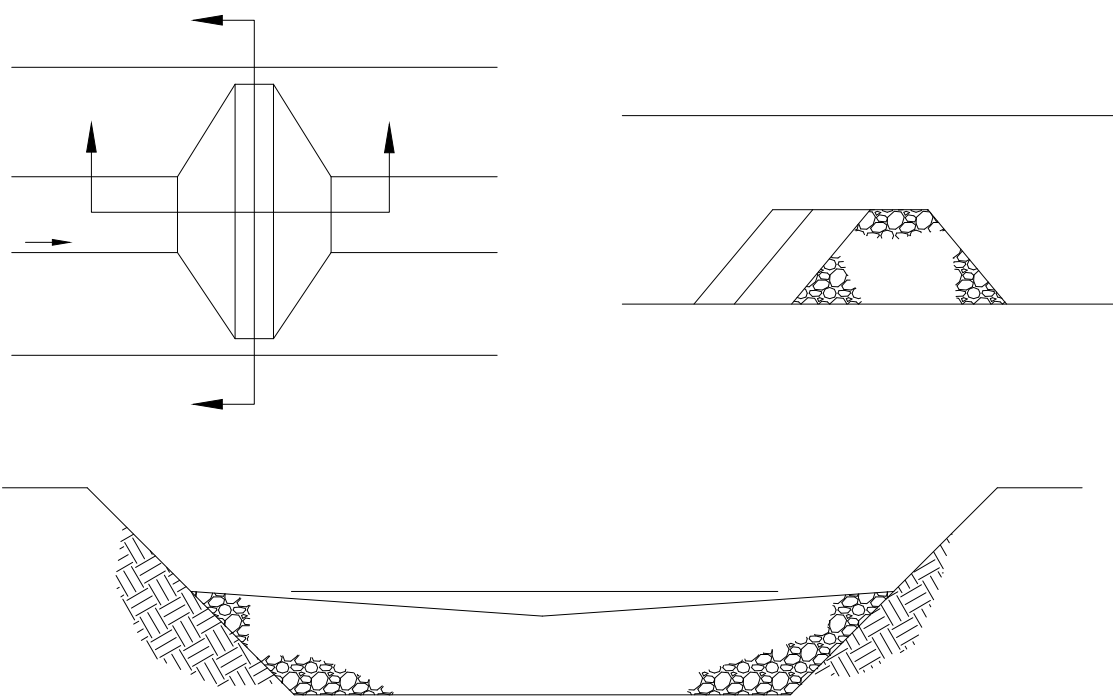
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.



NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.



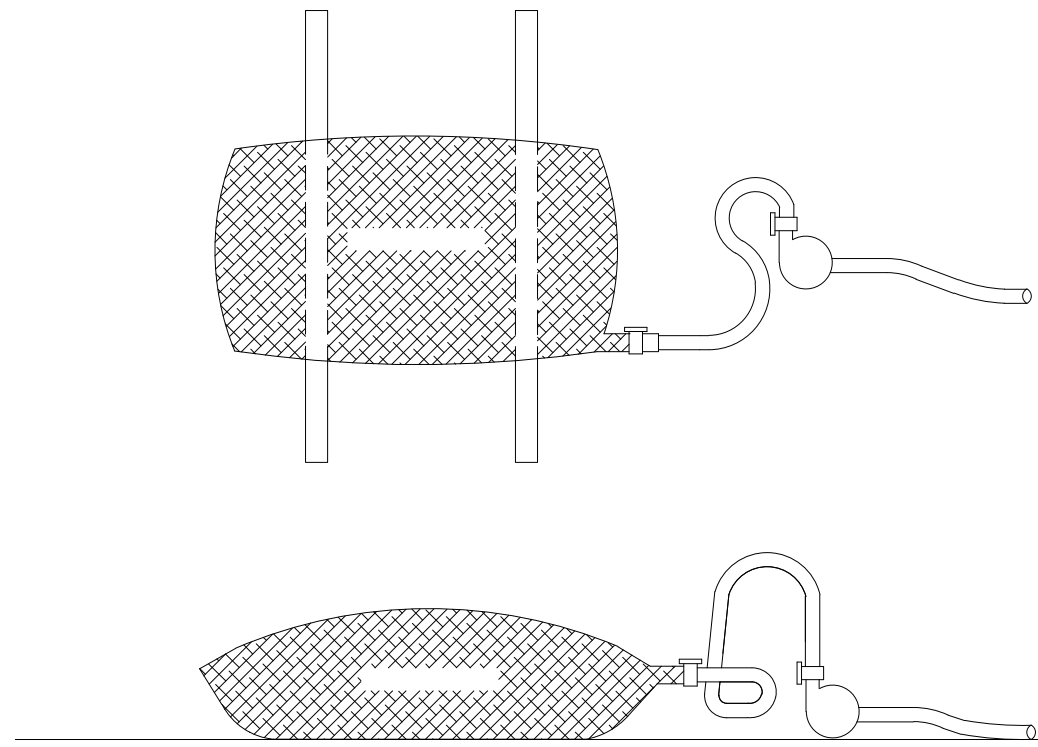
ROCK FILTER NO.	LOCATION	D (FT)	RIPRAP SIZE (R-)
1	C-3.1	2	3

FOR D ≥ 3 FT. - USE R-4
FOR D ≥ 2 FT. TO D < 3 FT. - USE R-3
NOT APPLICABLE FOR D < 2 FT.

NOTES:

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS.

IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS, WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

NO.	DATE	REVISION	APPR.
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SUBMITTED

PROJECT DESIGNER

APPROVED

DIVISION CHIEF

APPROVED

DIRECTOR - BUREAU OF ENGINEERING AND CONSTRUCTION

PENNSYLVANIA FISH AND BOAT COMMISSION
BUREAU OF ENGINEERING
450 ROBINSON LANE
BELLEFONTE, PA 16823
PHONE: (814) 359-5173
FAX:(814) 359-5153

PROJECT NO.: DGS A199-86

APPLICABLE CONTRACT NUMBERS:

GENERAL: N/A

MECH.: N/A

PLUMBING: N/A

ELECT.: N/A

KAERCHER CREEK LAKE
BATTERY ABATEMENT PROJECT

PFBC PROPERTY ID: FC182L
WINDSOR TOWNSHIP, BERKS COUNTY

EROSION AND SEDIMENT CONTROL
DETAILS

DRAWN BY: PEU	DATE: 1/30/2015	DRAWING NO.: ES-3 SHEET 10 OF 10
CHECKED BY:	SCALE: AS NOTED	